

growth, responsiveness to stimuli (e.g., antibiotics, different environment, etc.). May also include all measurable molecules, including nucleic acids, proteins, carbohydrates, proteoglycans, glycoproteins, and lipids. Stacked traits can include selectively and differentially activatable traits.

**Figure 16. Differential Activation of Selected Traits can Be Achieved by Adjusting and Controlling the Environment of the Traits.** For example, in one aspect, stacked traits can be comprised genetically introduced enzymes. Because the stacked enzymes have different activity profile (including reaction specificities and reaction requirements) they can be selectively and differentially activated by adjusting the environment to which they are exposed.

**Figure 17. Harvesting, Processing, Storage.** Differentially activated and/or selected Enzymes respond to the environment of harvesting, processing and storage to activate environmentally action specific promoters.

**Figure 18. Processing.** Pre-Pro Gene Product, an example of a Gene Product might be a protein. Through processing/ decorating the protein changes forms, eventually becoming active. It is at this point that specific traits can be expressed differentially.

**Figure 20. Differential Activation of Selected Precursor (Inactive) Gene Products.** Differential activation of selected precursor (inactive) gene products by controlling the post-translational modifications that differentially transform selected molecules from inactive precursor form to active form. Deselection of particular molecules can also be achieved by degradation (ex. by proteoclytic cleavage).

**Figure 21. Starting population comprised of an organism strain to be subjected to improvement or evolution in order to produce a resultant population comprised of an improved organism strain that has a desired trait.** Starting polulation comprised of an